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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,786	09/26/2001	Ben C. Platt	7093-112	3040

7590 08/20/2004

Fulbright & Jaworski LLP
Suite 2900
865 S. Figueroa St.
Los Angeles, CA 90017

EXAMINER

TADESSE, YEWEBDAR T

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/964,786	PLATT ET AL.	
	Examiner	Art Unit	
	Yewebdar T Tadesse	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,9,12-15,17,18 and 20-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,9,12-15, 17-18 and 28 is/are rejected.
- 7) ☒ Claim(s) 20-27 and 29-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/02/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species A in the reply filed on 05/26/2004 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Donnel, Jr. (US 5,549,668) in view of Lai (US 6,382,795). O'Donnell discloses (see Abstract, column 6, lines 36-62 and Figs 5-6) a method for modifying (changing) the refractive power of a light adjustable lens in the optical system, with lens modifying radiation (laser energy varying the curvature of the intraocular lens implant) comprising aligning a source of the modifying radiation so as to impinge the radiation onto the lens

Art Unit: 1734

(directing laser energy 16 at different direction to the implanted lens -this laser energy capable of having pattern) and controlling the quantity of the impinging radiation (applying laser energy as required to increase or decrease the refractive powder of the implanted lens for vision correction). O'Donnel is silent concerning the step of measuring the optical aberration of the lens. However it is well known in the art to measure system's or eye's lens vision error before performing any correction procedure; for instance Lai discloses (see column 1, lines 5-25) a method for measuring optical aberrations (refractive errors) of an eye to determine optical irregularity. It would have been obvious at the time the invention was made to include the essential step of measuring the optical aberration in O'Donnel to gain vital information about the optical abnormality of the lens so as correction procedures follow according to the measurement – guiding refractive laser surgery or providing prescriptions for eyeglasses and contact lenses as taught by Lai.

5. Claims 1-5 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jethmalani et al (US 6,450,642) in view of Lai (US 6,382,795). As to claims 1 and 5, Jethmalani et al teaches (see Figs 1-2 and columns 2-3, lines 30-67 and 1-25 respectively) optical elements (intraocular lenses) capable of post-fabrication power modification by performing irradiation procedure, wherein precisely controlled energy source (light) is exposed to the region of the optical element (lens) to attain the desired lens properties. Jethmalani et al also depicts (see Fig 1) part of the lens at the center and the entire lens irradiated by the hv (capable of having patterns). Jethmalani is silent

concerning the step of measuring the optical aberration of the lens. However it is well known in the art to measure system's or eye's lens vision error before performing any correction procedure; for instance Lai discloses (see column 1, lines 5-25) a method for measuring optical aberrations (refractive errors) of an eye to determine optical irregularity. It would have been obvious at the time the invention was made to include the essential step of measuring the optical aberration in O'Donnel to gain vital information about the optical abnormality of the lens so as correction procedures follow according to the measurement – guiding refractive laser surgery or providing prescriptions for eyeglasses and contact lenses as taught by Lai.

6. As to claims 2-4 and 28, In Jethmalani, the duration and the intensity (amount) and the duration of irradiation are controlled (see Fig 1, column 3, lines 2-12 and column 2, lines 11-13) and the step of irradiating the entire lens is performed to lock –in the desired lens property by polymerizing the refractive modulating composition (see column 3, lines 12-20 and column 8, lines 4-7). In Jethmalani et al, the radiation (hv) irradiating the entire lens is capable of being patterned radiation. As to claim 19, see for Fig 1 for the patterns of the lens exposed to different amount of radiation in modifying the refractive power of the lens (with aberration).

7. Claims 9, 12-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jethmalani et al (US 6,450,642) and Lai (US 6,382,795) as applied to claim 1 above, and further in view of Swinger et al (US 6,325,792), Yasuda et al (US

4,755,056) and Appeldorn et al (US 5,432,876). Jethmalani et al lacks teaching what type of light source is the impinging radiation. Swinger et al teaches the use of ultraviolet laser to modify the refractive power of the intraocular lens system (see column 28, lines 13-21 and column 35, lines 18-23). Yasuda et al teaches (see column 1, lines 10-45) a xenon arc lamp as sources of UV light. Appeldorn et al teaches (see column 5, lines 62-68) light sources for an illumination device including continuous and pulsed light sources such as laser diodes, lamps emitting in the UV. It would have been obvious at the time the invention was made to emit UV light onto the lens from the suitable sources such as shown by Swinger et al, Appeldorn et al or Yasuda et al in Jethmalani to effect the desired action onto the lens by transmitting the light.

Allowable Subject Matter

8. Claims 20-27 and 29-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: As to claim 20, Marchant et al (US 6,353,502) discloses a Vertical Cavity Surface Emitting Laser (VCSEL) used to generate a pattern for optical tape recording. Marchant et al's device is not used for modifying the refractive power of a light adjustable lens. Prior art of record does not disclose or suggest a method of modifying the refractive power of a light adjustable lens comprising, among others, aligning a

source of the modifying radiation so as to impinge the radiation in a pattern, wherein an ultraviolet vertical-cavity surface emitting laser array is used to generate the pattern and project it onto the surface of the light adjustable lens. As to claims 21-26, 29-30 and 32, Della Vecchia et al (US 6,648,473) teaches Liquid –Crystal Spatial Light Modulator as one of the known methods for using adaptive optics to compensate for aberrations of the human eye (see column 3, lines 5-17), however Della Vecchia et al does not teach how the radiation pattern is obtained. Prior art of record does not disclose or suggest a method of modifying the refractive power of a light adjustable lens comprising, among others, aligning a source of the modifying radiation so as to impinge the radiation in a pattern, wherein the pattern is obtained by projecting UV light through an apodizing filter or a spatial modulator or a digital light processor or by photo feedback. As to claims 27 and 31, Swinger et al (US 6,325,792) teaches (see claim 1, column 2, line 17 a laser-method for intraocular surgery using wavelength in the range of 400-1900 nm and 200 nm of Blum et al (see column 1, line 1-3). Prior art of record does not disclose or suggest a method of modifying the refractive power of a light adjustable lens comprising, among others, aligning a source of the modifying radiation so as to impinge the radiation in a pattern, in which the UV light has a wave length in the range of 350-380 nm and is applied at an intensity of 9.75-12.25 mw/cm².

Response to Arguments

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection (see rejections above).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4: 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yewebdar T Tadesse
YTT

LAURA EDWARDS
LAURA EDWARDS
PRIMARY EXAMINER